

Professional ODM/OEM suppliter

AWU50G

User's Manual

Part Name: 802.11b/g Wireless Module Part No.: AWU50G Version: V1.0



Revision History

Release	Date	Revision	Initials
1.0	2009-6-24	Initial release	SH





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1. Product Overview

The AWU50G is a 802.11b/g wireless Module is used on wireless termination. It delivers incomparable wireless performance for your device. As a value added Wi-Fi card, it provides 64/128/256 WEP, WPA/WPA-PSK、WPA2/WPA2-PSK security as well.

2. Key Feature

- IEEE 802.11b、IEEE 802.11g Compliant;
- PCI-E interface,hot-swapping supported;
- Work mode : Infrastructure、Ad-Hoc;
- Modulation: OFDM/DBPSK/DQPSK/CCK;
- 64/128/256 WEP encryption; WPA/WPA-PSK 、WPA2/WPA2-PSK security mechanism supported;
- QoS-WMM、WMM-PS quality mechanism supported;
- Transfer Rate : 54/48/36/24/18/12/9/6/11/5.5/2/1Mbps;
- Operating system: Windows 98/ME/2000/XP/64bit XP/2003,Linux;
- Transfer distance: Farthest 100 meters Indoor ,Farthest 300meters Outdoor (As a result of the environment varies) ;
- ROHS Compliant

3. Specifications

3-1. Solution

ltem	Description
MCU+SWITCH	Ralink RT2571+RT2528

3-2. Technical Spec

Standard	IEEE 802.11g、IEEE 802.11b	
	IEEE 802.11b/g ISM Band	
	USA(FCC): 2.412GHz ~ 2.462 GHz (CH1 ~ CH11)	
Operating Frequency	Europe(ETSI): 2.412 GHz ~ 2.472 GHz (CH1 ~ CH13)	
	Japan(TELEC): 11b: 2.412 GHz ~ 2.484 GHz (CH1 ~ CH14)	
	11g:: 2.412 GHz ~ 2.472 GHz (CH1 ~ CH13)	



Modulation	802.11b :CCK,DQPSK, DBPSK				
Modulation	802.11g :OFDM				
BY consistivity	802.11b :11Mbps:≦-84dBm				
RA Sensitivity	802.11g :54Mbps:≦-	70dBm			
Dower concumption	11b: RX: ≦ 226mA		TX: ≦ 236mA		
Power consumption	11g:	RX: ≦2	28mA	TX: ≦ 238mA	
Antenna	PCB antenna				
Operating Voltage	DC 5V				
	IEEE 802.11b:		Min	Typical	Max
	11/5.5/2/1 Mbps:		15dBm	17dBm	19dBm
Output Power	IEEE 802.11g:		Min	Typical	Max
	54/48/36/24/18/12/9/6Mbps		13dBm	14dBm	15dBm
Security	WEP 64/128/256-bit; WPA/WPA-PSK; WPA2/WPA2-PSK				
	Win CE 5.0/ 98 / ME / 2000 / XP / 64-bit				
Supported US	Linux				
Dimension (L*W *H)	75.5mm x 20mm x 5mm				
	Temperature	Н	umidity		
Environment Specification	Operating: 0-40°C	O cc	Operating:10%-90% (Nor condensing)		(Non-
	Storage: -10°C -70°C Storage: 5%-90% (Non-condensing)				

4. Install the driver

Step1 Insert the installation CD into your CD-ROM driver, Double click the icon

IS_AP_STA_7x_D-1... Setup.exe Macrovision Corp...

to start setup.

Step2 Choose *I accept the terms of the license agreement* and click *next* to go on.



alink Wireless LAN -	InstallShield Wizard	
License Agreement Please read the following licens	e agreement carefully.	
Ralink	RALINK Wireless Utility for Windows 98/ME/2000/XP/Vista Copyright (C) RALINK TECHNOLOGY, CORP. All Rights Reserves Thank you for purchasing RALINK Wireless product! SOFTWARE PRODUCT LICENSE The SOFTWARE PRODUCT is protected by copyright laws and international treaties, as well as other intellectual property laws and treaties. The SOFTW/ is licensed, not sold. 1. GRANT OF LICENSE. This End-User License Agreement grants you the f rights:Installation and Use. You may install and use an unlimited number of co SOFTWARE PRODUCT. Reproduction and Distribution. You may reproduce and distribute an unlimite copies of the SOFTWARE PRODUCT; provided that each copy shall be a to copy, including all copyright and trademark notices, and shall be accompani- this EULA. Copies of the SOFTWARE PRODUCT may be distributed as a st or included with your own product.	d. al copyright ARE PRODUCT following opies of the d number of rue and complete ed by a copy of andalone product <u>Print</u>
InstallShield	< Back	Cancel

Step3 Choose Ralink Configuration Tool and click next to go on.

Setup Type Select the setup type that b	est suits your needs.	
	Select Configuration Tool.	
	Ralink Configuration Tool	
	Microsoft Zero Configuration Tool	
Ralink		



Step4 Choose Optimize for WiFi mode and click next to go on.

Ralink Wireless LAN	- InstallShield Vizard	
Setup Type Select the setup type that bes	st suits your needs.	
	Choose Configuration TxBurst or WiFi.	
	 Optimize for WiFi mode Optimize for performance mode 	
Ralink		
InstallShield	< Back Next > Canc	el

Step5 Click Install to begin the setup.

Ralink Wireless LAN -	InstallShield Vizard	×
Ready to Install the Program The wizard is ready to begin ins	n tallation.	
Ralink	Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
InstallShield	< Back Install Cancel	1



×

Ralink Wireless LAN -	InstallShield Vizard
Setup Status	

Setup Status	
Ralink	The InstallShield Wizard is installing Ralink Wireless LAN
	Installing
	Please Wait
install Shield	Cancel

Step6 Click Finish to end the setup.

Ralink Wireless LAN -	InstallShield Wizard
	InstallShield Wizard Complete
Ralink	The InstallShield Wizard has successfully installed Ralink Wireless LAN. Click Finish to exit the wizard.
InstallShield	< Back Cancel

5. connect

Plug in your wireless LAN adapter, it will be recognized and auto installed. Just confirmed it like below:



📙 计算机管理	
 ■ 文件 (2) 操作 (4) 查看 (Y) 窗口 (Y) 帮助 (H) ← → ● (2) ● (3) ● (4) ● (.e×
 I Bolle Je (448) ● ● DVD/CD-ROM 驱动器 ● ● DVD/CD-ROM PROM PROM ● ● DVD/CD-ROM PROM ● ● POM ● ● DVD/CD-ROM PROM ● ● POM ● ● ● POM ● ● POM ● ● ● POM ● ● ● ● POM ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	

6. Make infrastructure connection

. Double click the icon in red circle

You will see:			MAX 83					
R• RaUI								
Profile	LLL Network	Advanced	Statistics	www.	Ø WPS	Radio On/Off	About	
Sorted by >>	SSID	🖉 Cha	nnel 🥝	Signal		Show dBm		
DCW-BR54+		6 1	89	50 dBm				
Rescan	Add to Profile	e Cor	nect					

You can click the button **Rescan** to find which AP is in range, they will show on the window. Choice one you want to connect, and click the button **connect** to finish the connection. An infrastructure connection is completed.



7. Help information in RaUI

LLL Network	Advanced	Statistics	QoS	Ø	Q	Z	
Network	ر Advanced	Statistics	Gos	0	•	Z	-
		Statistics	. www.	WPS	Radio On/Off	About	-
SSID	🥝 Cha	nnel (Signal		Show dBm		
	В 1	B 9	-50 dBm				0
Add to Profil	e Cor	inect					
DCW-BR54+ < Link is Up [Tx 1 <> 2412 M Open NONE	> 00-03-0F-0F-0 Power:100%) Hz	1-52>		Link C Signal Stri Noise Str	Quality >> 100% ength 1 >> -48 dBm rength >> -79 dBm		
ut your IP	address:						
DCW-BR54+ <- Link is Up [T×F 1 <> 2412 MF Open NONE	-> 00-03-0F-0F-0 'ower:100%] Hz	1-52		Link (Signal St Noise	Quality >> 100% trength 1 >> 100% Strength >> 70%		
Infrastructure 192.168.1.102 255.255.255.0 192.168.1.1	∍ ⊃ >		Transmit Link Speed >: Throughput > Receive	> 54.0 Mbps	Max 15.288 Kbps Max		
	Add to Profile	Add to Profile Cor DCW-BR54+ <> 00-03-0F-0F-0 Link is Up (TxPower: 100%) 1 <> 2412 MHz Open NONE DCW-BR54+ <> 00-03-0F-0F-0 Link is Up (TxPower: 100%) 1 <> 2412 MHz Open NONE Infrastructure 192.168.1.102 255.255.255.0 192.168.1.1	 ▲ Add to Profile Connect ▲ Add to Profile Connect ▲ Connect ▲	Add to Profile Connect DCW-BR54+ <> 00-03-0F-0F-01-52 Image: Connect Utrik is Up (TxPower:100%) Image: Connect 1 <> 2412 MHz Open NONE Open DCW-BR54+ <> 00-03-0F-0F-01-52 Link is Up (TxPower:100%) 1 <> 2412 MHz Open NONE Infrastructure Transmit 192.168.1.102 Link Speed > 255.255.0 Throughput >	Add to Profile Connect DCW-BR54+ <> 00-03-0F-0F-01-52 Link 0 Link is Up (TxPower: 100%) Signal Str 1 <> 2412 MHz Noise Str Open NONE DCW-BR54+ <> 00-03-0F-0F-01-52 Link 0 Link is Up (TxPower: 100%) Noise Str NONE Noise Str DCW-BR54+ <> 00-03-0F-0F-01-52 Link 0 Link is Up (TxPower: 100%) Signal Str 1 <> 2412 MHz Noise Str Open Noise NONE Infrastructure 1 <> 2412 MHz Noise Open Noise NONE Transmit 1/2.168.1.102 Link Speed >> 54.0 Mbps 255.255.255.0 Throughput >> 0.000 Kbps 1/2.168.1.1 Beceive	Add to Profile Connect Add to Profile Connect CDCW-BR54+ <> 00-03-0F-0F-01-52 Link Quality >> 100% Link is Up [TxPower:100%] Signal Strength 1 >> -48 dbm Noise Strength 1 >> -48 dbm Noise Strength 1 >> -79 dbm NONE Noise Strength 1 >> -79 dbm DCW-BR54+ <> 00-03-0F-0F-01-52 Link Quality >> 100% Ink SUP [TxPower:100%] Signal Strength 1 >> -79 dbm NONE Signal Strength 1 >> -70% Open Noise Strength 1 >> 70% Open Noise Strength 1 >> 70% Open Transmit Ink Speed >> 54.0 Mbps Max 192.168.1.102 Transmit 192.168.1.102 Breetive	Add to Profile Connect Add to Profile Connect DCW-BR54+ <-> 00-03-0F-0F-01-52 Link Quality >> 100% Link is Up [TxPower: 100%] Signal Strength 1 >> -48 dBm 1 <> 2412 MHz Noise Strength >> -79 dBm DCW-BR54+ <-> 00-03-0F-0F-01-52 Link Quality >> 100% Link is Up [TxPower: 100%] Signal Strength 1 >> -79 dBm NONE DCW-BR54+ <-> 00-03-0F-0F-01-52 DCW-BR54+ <-> 00-03-0F-0F-01-52 Link Quality >> 100% Link is Up [TxPower: 100%] Signal Strength 1 >> 100% 1 <> 2412 MHz Noise Strength >> 70% Open Noise Strength >> 70% NONE Transmit Infrastructure Transmit 192.168.1.1 Max 192.168.1.1 Receive

8. Make Ad-Hoc mode connection

8.1 Make an Ad-Hoc SSID

Step1 Click the button Add to make the Ad-Hoc SSID:



R RaU	I								
•	Profile	↓ Network	ر Advanced	Statistics	www.	Ø WPS	Radio On/Off	R About	-
		Pro	file List						
						Profile Name :	>>		
						SSID	>>		
					1	Network Type	>>		
					A	uthentication	>>		
						Encryption	>>		
						Use 802.1x	>>		
						Tx Power	>>		
						Channel	>>		
					Pow	PTS Threshold	>>		
1	Add	Edit	Delete	Activate	Fragm	ent Threshold	~~		
		and like	D D D D D D D D D D D D D D D D D D D	HE CIVES.	Fragin	ent mieshold	~~		
								-	-

Step2 Choose the SSID and Network Type as blew, and click OK to go on.

en comig Addi. Venciy.	00217			
Profile Name >> PROF1		Network Type >>	Adhoc	•
SSID >> DCW-BR54+	•	Tx Power >>	Auto	•
		Preamble >>	Auto	•
Power Save Mode >> 🥝 CAM	PSM	Channel >> 🚺	\supset	•
RTS Threshold	0) 2347	2347	
Fragment Threshold	256) 2346	2346	

Step3 Clilk the PROF1 in the window, and you can see the information of Ad-Hoc SSID.

		<u></u>	(j ^e		QoS	0	2	R	
	Profile	Network	Advanced	Statistics	WWW	WPS	Radio On/Off	About	
		Pro	file List						
PRO	F1	DCW-BR54+			2	Profile Name	>> PROF1		
						SSID	>> DCW-BR54+		
						Network Type	>> Ad hoc		
					A	uthentication	>> Open		
						Encryption	>> None		
						Use 802.1x	>> NO		
						Tx Power	>> Auto		
						Channel	>> 1		
					Pov	ver Save Mode	>> CAM		
						RTS Threshold	>> 2347		
	Add	Edit	Delete	Activat	🐑 Fragπ	ent Threshold	>> 2346		

8.2 Setup static IP address for the Ad-Hoc linkStep1 At its property page, double click item *Internet Protocol (TCP/IP)*



💊 网络连接		
文件(E) 编辑(E) 查看(Y) 收藏(A) 工	具① 高级 ⑧ 帮助 例	
🕝 后退 · 🕥 · 🏂 🔎 搜索 🎼	▶ 文件夹 ::::	
地址 @) 👟 网络连接		🖌 🏹 转到
回络任务 ▲ 回 创建一个新的连接 ● ② 设置家庭或小型办公网 ●	威高速 Internet 表线网络连接 49 未连接,有防火墙的 (w) RT73 USB Wireles Realtek RTLS139	
 ○ 56 ● 型取 Windows 防火墙设置 ● 查看可用的无线网络 ● 禁用此网络设备 ● 修复此连接 ● 重命名此连接 ● 重吹此连接的设置 	 → 无线网络连接 49 尾性 常規 高级 连接时使用: ● KIT3 USB Wireless LAN Card ■ 比连接使用下列项目 (0): 	
其它位置 ★ 控制面板 ● 控制面板 ● 四上邻居 ● 我的文档 ● 我的电脑	♥ Wetwork Monitor Driver ♥ Weatek EAPPkt Protocol ♥ Thernet 助议 (TCP/IP) ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥	
详细信息 注烟信息 无线网络连接 49	 ✓ 连接后在通知区域显示图标 (@) ✓ 此连接被限制或无连接时通知我 (@) 	

Step2 You will get:

如果网络支持此功能,则可以获 您需要从网络系统管理员处获得	取自动指派的 IP 设置。否则, 适当的 IP 设置。
○ 自动获得 IP 地址 (0)	
IP 地址(L):	
子网掩码(U):	
默认网关 (1):	
○自动获得 DMS 服务器地址	(<u>B</u>)
● 使用下面的 DNS 服务器地技	址(E):
首选 DNS 服务器 (P):	(
备用 DNS 服务器(A):	

Step3 Fill the IP address blank, example as below:



ternet 协议 (TCP/IP)	属性	? 🛛
.规		
如果网络支持此功能,则可以 忽需要从网络系统管理员处获	获取自动指派的 IP 设置。否则 得适当的 IP 设置。	b.
○ 自动获得 IP 地址(0)		
⊙使用下面的 IP 地址(S)		
IP 地址(L):	192 .168 . 1 .102	
子网掩码(U):	255 . 255 . 255 . 0	
默认网关 @):		
◯ 自动获得 DNS 服务器地	止(2)	
⊙使用下面的 DNS 服务器	地址(E):	_
首选 DNS 服务器(P):		
备用 DNS 服务器(A):	· · · [
	高级化	
	确定	取消

Step4 Click OK to finish the setup.

RT73 USB	Wireless LAN (ard	配置(C)
此连接使用下列	项目 (0):		
V V Realte	k Monitor Drive k EAPPkt Protoc et 协议(TCP/IF	r ol	
<			>
安装 (M) 说明	卸載(ש [属性(E)
-			



8.3 Ad-Hoc setup for one point completed.

- 8.4 Setup another Ad-Hoc point as step a,b,c,d.
- 8.5 Ad-Hoc mode link accomplished. And you can visit each other.

Note: To make an Ad-Hoc mode link, we should choice the same channel. Its static IP address should be in the same subnet, and the SSID should be the same too.



Appendix A: Terminology

- ad hoc network A network composed solely of stations within mutual communication range of each other via the wireless medium (WM).
- access point (AP) Any entity that has station functionality and provides access to the distribution ser-vices, via the wireless medium (WM) for associated stations.
- Station (STA) Any device that contains an IEEE 802.11 conformant medium access control (MAC) and physical layer (PHY) interface to the wireless medium (WM).
- RTS (Request To Send) The frame type used to deign the RTS-CTS clearing exchange. RTS frames are used when the frame that will be transmitted is larger than the RTS threshold.
- CTS (Clear To Send) The frame type used to acknowledge receipt of a Request to Send and the second component used in the RTS-CTS clearing exchange used to prevent interference from hidden nodes.
- WEP (Wired Equivalent Privacy) The optional cryptographic confidentiality algorithm specified by IEEE 802.11 used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired local area network (LAN) medium that does not employ cryptographic techniques to enhance privacy.
- authentication The service used to establish the identity of one station as a member of the set of stations authorized to associate with another station.
- WPA (Wi-Fi Protected Access) A specification of standards-based, interoperable security enhancements that strongly increase the level of data protection and access control for existing and future wireless LAN systems.



Appendix B: Important Notices

Federal Communications Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures.

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.



This device is intended only for OEM integrators under the following conditions:

The antenna must be installed such that 20 cm is maintained between the antenna and users, and The transmitter module may not be co-located with any other transmitter or antenna. As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions can not be met, then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.